# Raptoreum:
# A Flexible System For The Creation And Transfer Of "Futures," Assets And Contracts.

The name Raptoreum is derived by combining Ravencoin and Ethereum. A Raven is considered an "honorary" Raptor, and given that we are a code fork of Ravencoin and are adding smart contracts the name fits. A big heartfelt thank you to the Bitcoin and Ravencoin developers, without whom we would not have this great codebase to build from.

## Introduction

Raptoreum began as the fairly simple idea, introducing smart contracts which would allow on chain, trustless transfers (goodbye centralized marketplaces) on the Ravencoin codebase, however with the automation of assets and RTM (Raptoreum). The project has quickly evolved, adding innovative features that not only further expand the asset layer, but also introduce features that could help other Blockchain projects. Raptoreum is being designed to allow anyone to quickly and easily create an asset and safely transfer that asset through on chain trustless transfers.

Raptoreum is a code fork of Ravencoin and inherits current and future features such as assets, voting, dividends, and messaging. We are further expanding asset capabilities by adding the following features:
The option to lock X amount of coins or assets into an asset. Coins are unlocked at a block number of choice or timestamp.
Trustless on chain transfers of assets and native coins VIA Smart Contracts.

These additional features open up the power and ease of use of Raptoreum's asset layer to a greater variety of industries under the Distributed Application umbrella. DAPP's are a critical part of driving widespread adoption and Raptoreum hopes to help provide further alternatives and possibilities for DAPP developers.

It is one of our goals to not only innovate ideas for Raptoreum but to contribute back to the general crypto community with open-source features that anybody can use to help their Blockchain projects succeed. Prysm which is our 51% / double spend protection system will be open-source and available for anybody to use. Recent events in the Cryptosphere show just how important this type of feature is. This will not be 100% foolproof but no system requiring consensus is.

## Problems Raptoreum Is Attempting To Solve

**Driving Mass Adoption:** One of the largest issues that Crypto as a whole faces is mass adoption. Raptoreum helps to solve this by providing the ability for anybody to tokenize anything they like in an easy and intuitive fashion. In addition we provide the flexibility and power of smart contracts which allows DAPP developers to easily create distributed applications that will cover

a vast range of uses ranging from gambling all the way to education.

- **FPGA And ASIC Resistance:** Raptoreum is dedicated to keeping ASICs and FPGAs off the network to increase decentralization and keep it mineable by everyone without the use of high dollar specialized hardware.
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As part of our effort to make this happen we will roll out our own POW algorithm codenamed "GhostRider" [3]. GhostRider uses the x16r randomizer combined with CNv1-8, this results in an algorithm that discourages ASIC and FPGA by making it much too expensive for a minimal gain. Added to that, we are developing the ability to adjust the algorithm on the fly. This allows Raptoreum to change some algorithmic parameters on the fly that would dump ASICS and FPGA should they be found to be on the network, without requiring the slow, costly and insecure process of forking fully.

On chain forking, a little discussed but critical point in the whole chain forking debate is that every time an active chain is forked, security decreases as you can start to determine points of correlation between the original chain and the offshoots. This is caused by private keys etc being used on multiple chains as the same addresses will be on both chains from the point of snapshot etc.Bearing this in mind, RTM only has a single planned fork to activate the asset layer roughly 12 months past launch.

- **51% and Double Spend Protection:** 2018 saw a sharp increase in successful 51% attacks, and that trend is expected to continue into 2019. 2018 saw a total of 20 million dollars stolen due to these attacks [1], in addition the damage to a projects reputation can be devastating. Cost to perform a 51% attack is smaller than most would think[2]. Raptoreum is working on a protection system for this named "***Prysm***" which will be open-source and available for anybody to take advantage of. Servicenodes are responsible for handling Prysm.

- **Hyper Inflation:** Masternodes, while a powerful tool, can cause hyperinflation that can cause a coin to crash on the markets and cause irrevocable damage to a project. Raptoreum introduces a custom tiered collateral and reward system to prevent this (see **Servicenodes**).

- **Scaling:** Raptoreum does not add contracts like Ethereum, instead Servicenodes are used to provide this service which will provide better scalability and avoid the scaling issues that Ethereum has encountered.

## Servicenodes

Servicenodes play multiple critical roles on the Raptoreum network. They are responsible for storing and executing smart contracts as well as running PRYSM which is our two pronged 51% / double spend defense. Raptoreum uses a custom emissions curve with a tiered servicenode collateral and rewards system. In doing so avoiding the hyperinflation that damages many other coins that use Master/Service-nodes.

**Hardware:**
In order to perform this variety of functions, the expected (to be confirmed) specs for running a service node should be a 4 core 8Gb set up.

**Raptoreum Servicenodes**
In terms of node rewards, they do not work fully in the traditional fashion as that has proven time and time again to undermine the long term viability of projects. We have chosen the approach of paying for services rendered to the network as opposed to how many other coins are currently doing it.
Nodes running PRYSM will be paid with the "asset fees" that would otherwise be burnt upon creation on top of 5% of block rewards. Yes, this will remove some of the otherwise deflationary nature of asset creation. However, it will at the same time allow for the running of a chain where reorganisation is essentially impossible beyond less than a couple of blocks enabling speedy yet secure transfers.
Nodes running the contract layer will be paid 15% of block rewards.

**Overall service node rewards and ROI:**
With a fully developed network of 4-6000 service nodes at a maximum collateral of 1.9 million RTM annual ROI should be sitting at the 8-12% mark depending on the exact number of nodes on the network etc. This is not an unreasonable level of return given the cost of setting up and running a node are not insubstantial.

**Reward structure:**

| Block # | Block Reward | Miner Reward | Contract layer Reward | PRYSM Reward | Developer reward | Service Node collateral |
|---|---|---|---|---|---|---|
| 0-719 | 4 | 1 | 1 | 1 | 1 | 500,000 |
| 720-5,759 | 5,000 | 4,750 | 0 | 0 | 250 | 500,000 |
| 5,760-85,767 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 500,000 |
| 85,768-128,291 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 600,000 |
| 128,292-170,815 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 700,000 |
| 170,816-213,339 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 800,0000 |
| 213,340-255,863 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 900,000 |

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|---|---|---|---|---|---|---|
| 255,864-298,387 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,000,000 |
| 298,388-340,911 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,150,000 |
| 340,912-383,435 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,300,000 |
| 383,436-425,959 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,450,000 |
| 425,960-468,483 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,600,000 |
| 468,484-511,007 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,750,000 |
| 511,008-553,531 | 5,000 | 3,750 | 750 | 250+ asset fees | 250 | 1,900,000 |
| 553,532-574,793 | 4,990 | 3,742.5 | 748.5 | 249.5+ asset fees | 249.5 | 1,900,000 |
| 574,794-596,055 | 4,980 | 3,735 | 747 | 249+ asset fees | 249 | 1,900,000 |
| 597,056-xxx,xxx | 4,970 | 3,727.5 | 745.5 | 248.5+ asset fees | 248.5 | 1,900,000 |

## Contact

**Discord:** https://discord.gg/2T8xG7e
**Telegram:** https://t.me/raptoreumm
**Twitter:** https://twitter.com/raptoreum
**Reddit:** https://www.reddit.com/r/raptoreum/

## Sources

[1] 2018 51% and double spend attacks: https://thenextweb.com/hardfork/2018/10/23/cryptocurrency-51-percent-attacks/
[2] Cost to perform 51% attacks:
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